

## REVIEWS

**The Codiaceae of the Siboga Expedition, including a monograph of the Flabellarieae and Udoteae\***

The recent phycological work issued under the above title is one of the extensive series of monographs, now approaching completion, that embody the zoölogical, botanical, oceanographic, and geological results of the scientific expedition to the Dutch East Indies in 1899-1900 under the leadership of Dr. Max Weber, professor of zoölogy in the University of Amsterdam. The study of the specimens of the interesting family Codiaceae of the green algae obtained on this expedition was entrusted to Mr. and Mrs. Gepp of the Botanical Department of the British Museum. The numerous comparisons necessary for the proper determination of these East Indian specimens and the unexcelled advantages for a review of the species of the world offered by the collections of the British Museum and the Royal Botanic Gardens at Kew led quite naturally to a general monographic treatment of the principal sections of the family. And as these groups are particularly well represented in tropical and subtropical America the monograph will prove of much interest and importance to American students of the marine algae.

The general introduction to the monograph includes suggestive "genealogical trees" indicating the authors' views as to the relationships of the genera and of some of the species. The presence or absence of calcification is considered of primary importance and two series are accordingly recognized. The synopsis of genera shows sixteen groups of generic rank, as contrasted with the eight of Wille's treatment in the Engler & Prantl *Natürlichen Pflanzenfamilien* (1890) and the ten of his recent (1910) *Nachträge* to that work. *Flabellaria* Lamour. has been revived for a group of two species typified by the chiefly Mediterranean plant commonly known as *Udotea Desfontainii*. For a group of three species (two newly described) typified by Kützing's West Indian *Rhipilia tomentosa*, Kützing's generic

\* A. & E. S. Gepp. The Codiaceae of the Siboga Expedition, including a Monograph of the Flabellarieae and Udoteae.

Siboga-Expeditie, Monographie 62: 1-150. *pl.* 1-22. F 1911. E. J. Brill, Leiden. 4to. Price, fr. 15.50.

name *Rhipilia* has been restored. *Rhipiliopsis*, *Rhipidodesmis*, and *Boodleopsis* are new generic names proposed for groups in which the authors have recognized no American species.

The treatment of the genera and species of the Codiaceae is based on years of careful study of the plants and the relevant literature and is characterized by historical accuracy, by usually successful efforts to examine original specimens, by a scrupulous regard for nomenclatorial types in applying generic and specific names, by a grasp of the really diagnostic characters, and by an eminently fair and judicial attitude toward the views of other workers in the same field. The authors are particularly generous in their acknowledgments of the efforts of the present reviewer toward an orderly and natural arrangement of the plants of this family. The confusions that have resulted from insufficient materials and from wrong application of the older names are being gradually cleared away, but much as to the life-histories and modes of reproduction of these attractive plants remains to be learned by some patient investigator who may have the opportunity to keep living specimens under more or less continuous observation for extended periods of time.

The admission that the paper under review is one of the very best types of a modern taxonomic monograph does not, of course, preclude the possibility of an honest difference of opinion as to some of the minor points involved, even among those who are in possession of the same basal facts. Whether or not *Avrainvillea sordida* Murray & Boodle *p.p.* is preferred to *Avrainvillea levis* Howe is simply a matter of codes of nomenclature or of their interpretation. The case is a complicated one and none of the prevalent rules of nomenclature is altogether definite as to its solution. But the reviewer has little doubt that many supporters of the Vienna Rules may be found who will hold that the combination *Avrainvillea sordida* was first effectively published by Mazé and Schramm and that its proper application is determined by the citation of the previously published diagnosis of *Udotea sordida* Mont. and not, as the Gepps hold, by the citation of a numbered specimen. The Vienna Rules, as is well known, avoided a definite and precise application by ignoring

the idea of nomenclatorial types and they certainly contain no warrant for asserting that the first specimen cited by Mazé and Schramm, which may or may not exist in any herbarium, "stands good as type" of *Avrainvillea sordida* Crouan. *Avrainvillea sordida* Crouan being really according to the Gepp's showing, a mix-up of five species, and the later *Avrainvillea sordida* Murray & Boodle being a mix-up of three, the adoption of "*Avrainvillea sordida* Murray & Boodle *p.p.*" as the "oldest specific name to which no doubt can be attached" strikes the reader as a trifle odd.

The adoption of the name *Avrainvillea Mazei* Murray & Boodle for the species for which the reviewer and Mr. F. S. Collins have of late used the name *Avrainvillea longicaulis* (Kütz.) Murray & Boodle *p.p.* hinges on the authors' doubts as to the identification of Kützing's *Rhipilia longicaulis*. Kützing's description and figures of this plant seem at first sight not altogether easy to harmonize with any one of the species recognized today. The original specimen or specimens, collected in the West Indies, apparently do not exist in the Kützing herbarium, now owned by Madame Weber van Bosse, and the authors of the monograph under review state that they have not seen them. Kützing in publishing *Rhipilia longicaulis* cited "Herb. Sonder." The reviewer, a few years ago, learning that the Sonder herbarium had become part of the National Herbarium of Victoria, Australia, wrote an inquiry to the acting curator of the latter herbarium who courteously replied that there was in the Sonder collection a specimen from Antigua bearing the name *Rhipilia longicaulis* Kütz. He furthermore kindly enclosed small fragments, sufficient for a microscopic examination, from both flabellum and stipe. A study of these fragments led to the adoption of the name *longicaulis* for the species described by Murray and Boodle as *Avrainvillea Mazei*. The authors of the new monograph, relying upon Kützing's figure of flabellum filaments, which from the scale of magnification used appear to be much more slender than those of *A. Mazei*, have expressed doubts as to the correctness of the reviewer's interpretation of *Rhipilia longicaulis* and have suggested the disturbing possibility that the name *longicaulis* may have to be taken up for the species which they call

*Avrainvillea sordida*. The reviewer believes that a study of what is presumably the original specimen would convince them that no such unhappy step will be necessary and also that *longicaulis* is the legal specific name for the plant that they are calling *Avrainvillea Mazei*. The flabellum filaments of the Sonder plant have a diameter of 28–55 $\mu$ , while those of *A. levis* (*A. sordida*) have a diameter of 6–24 $\mu$ . Filaments with slender rhizoidal endings of the size and nearly the form figured by Kützing may be found in the stipe of the Sonder plant as well as in the stipes of most of the plants that are referred to *A. Mazei*. The true explanation of the peculiar character of the filament figured by Kützing is probably that although the filament may have come from the "Phyllom" as alleged, it came from so near the stipe as to have the characters of the stipe filaments. Furthermore, the natural-size figure given by Kützing, although the bifid flabellum depicted is rare and abnormal, has decidedly the habit of plants of the species called *A. Mazei* by the authors of the monograph and not the habit of plants of the species called *A. sordida*.

Under the discussion of *Penicillus* one finds the unexpected statement that the specimen in the British Museum issued as no. 1482 of the Phycotheca Boreali-Americana under the name *Udotea conglutinata* represents a diminutive and deceptive state of *Penicillus capitatus*. Mr. F. S. Collins in "The Green Algae of North America" has recently referred this number to *Udotea cyathiformis* and the present reviewer agrees with Mr. Collins in this determination. The specimen under this number in the New York Botanical Garden set of the Phycotheca is, like that in the British Museum, diminutive and possibly a "starveling," but the reviewer has seen and collected several intermediates between this condition and the larger explanate states of *Udotea cyathiformis*. The last-named species is often strikingly *Penicillus*-like in its structural characters, being scarcely more than a *Penicillus* with a cup-shaped or much flattened head, though its filaments are more coherent than in any recognized species of *Penicillus*.

Börgeesen's "ingenious" but unsupported theory that *Clado-*

*cephalus scoparius* Howe is probably a condition of *C. luteofuscus* (Crouan) Börg. "developed under peculiar, most probably unfavourable external conditions of life" has been rejected by the authors of the monograph as also by Mr. F. S. Collins, though unfortunately it has been adopted by Wille in his recent Nachträge to the Engler & Prantl Natürlichen Pflanzenfamilien. In this connection it may be remarked that if any real evidence is ever brought forward to show that *Cladocephalus scoparius* and *C. luteofuscus* are forms of one species it may be contended with some justice that the legal name for the species will be *Cladocephalus scoparius*, inasmuch as the *Flabellaria luteofusca* of the Mazé and Schramm list remained essentially a *nomen nudum* until after the publication of *C. scoparius*.

An appendix to this admirable monograph contains Latin descriptions of the new genera and species proposed in the body of the work. Re-publication in this form has been considered desirable in order to conform to the requirements of the Vienna Rules, though it is pleasing to note that the authors have not ventured to reject a certain recently proposed specific name simply because it has never been accompanied by a Latin diagnosis.

Twenty-two handsome lithographed plates supplement in a most helpful manner this notable contribution to phycological literature.

MARSHALL A. HOWE.

## OF INTEREST TO TEACHERS\*

### BIOLOGY FOR COLLEGE ENTRANCE

The new plan for admission to Harvard, which aims to improve articulation with secondary schools, especially public high schools, reduces the examinations to four, which must be taken at one time. A satisfactory record in these examinations will admit to Harvard College without conditions: (a) English, (b) Latin, or for candidate for the degree of S.B., French or German, (c) Mathematics, or Science (Physics or Chemistry), (d)

\* Conducted by Miss Jean Broadhurst, Teachers College, Columbia University.